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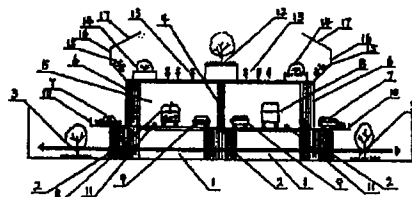
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权利要求书 1 页 说明书 3 页 附图页数 2 页

[54]发明名称 带停车场分行式立体公路

[57]摘要

本发明涉及一种彻底解决目前交通堵塞、自行车、行人、机动车相互干扰,恶性交通事故频发,停车难、汽车尾气污染严重,城市绿化不够等问题的立体结构式的公路设施。本发明主要由首层地面行人广场、一层污染气体中心处理设施、一层全封闭式机动车调头设施。二层机动车通道、停车场、公交车站、污染气体收集系统。三层 自行车专用道路、自行车存车处、及多层绿化带所组成。



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## 权利要求书

1、一项带停车场分行式立体公路设施，分别由首层的行人广场和污染空气处理中心及全封闭机动车调头设施、二层的全封闭式机动车通道、公交车站、污染空气收集系统及二层两侧的机动车停车场。三层的自行车专用道及三层特种绿化池组成的绿化带，有机结合所构成。其特征在于：整个带停车场分行式立体公路，由上、中、下三层各自独立的行驶系统所组成的一个全封闭式的立体公路体系。其二层为全封闭式的机动车道与停车场。三层为自行车专用道路。二层和三层分别由随公路长度增加而增加的支柱支撑。

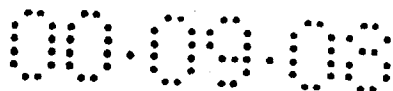
2、根据权利要求1所述的带停车场分行式立体公路，其特征在于：所述的一层为禁止任何车辆行驶的行人步行广场。而设在一层的机动车调头、转弯设施为任何行人都无法以任何方式进入的全封闭式构架所组成。

3、根据权利要求1所述的带停车场分行式立体公路，其特征在于：一层每隔一段适当的距离，均设有一污染空气处理中心与二层污染空气收集系统严密配合。

4、根据权利要求1所述的带停车场分行式立体公路，其特征在于：二层全封闭式机动车道两侧除公交车站和各种路口之外，全部为机动车停车场。

5、根据权利要求1所述的带停车场分行式立体公路，其特征在于：二层全封闭式机动车道两侧，根据公共交通的需要，每隔一段适当的距离，即设一座公交车站。每座公交车站的站台均设有延长出来的出租车站台。每座公交车站均设有两部客货两用电梯。二层全封闭式机动车道内部，设有污染空气收集系统。二层全封闭式机动车道，由中间隔墙将两边反方向行驶的机动车彻底隔开。

6、根据权利要求1所述的带停车场分行式立体公路，其特征在于：三层为全封闭式自行车道，道路两侧为带棚存车处，道路中间和存车处与行车道之间由绿化池分段隔开。自行车道设有专供自行车上道用的自动滚梯。



## 说明书

### 带停车场分行式立体公路

本发明涉及一种自行车、行人、机动车分开并在机动车道两侧，建有停车场的立体交通公路。

经检索查阅现有的技术及文件资料，和实际考察北京的道路情况，到目前为止，尚未发现有与本发明创造相同的任何文件及设施。

本发明的目的在于，彻底解决长久以来自行车、行人、机动车行驶和停放，都在一个平面上，所造成的交通堵塞、相互干扰、恶性交通事故频发等严重阻碍城市经济进一步向前发展的城市道路交通和以往道路建设资金投入极难收回，及严重影响城市空气质量的汽车尾气排放的外部处理问题。

对于解决上述目地，本发明是这样实现的：带停车场分行式立体公路，主要是由上、中、下三层路面组成。其中最下面为首层为步行广场，此层在正常情况下，不允许包括自行车在内的任何车辆通过，从而达到在行驶活动中车辆与行人彻底分离的目的。对于分布在广场内的小型店铺的进出货问题，可在夜间限时进行。另外，此层每隔一段适当的距离，即设一中央污染空气处理机房。空气污染处理设施将分案申请，此外机动车经常调头的地方设计建筑一处由二层向下，进入一层全封闭式的调头转弯通道。以解决机动车调头难和转弯时易发生交通事故的问题。

其次是第二层为中层，此层是为解决车辆日亦增多，交通堵塞及治理汽车尾气污染容气而发明设计的。其主要由半封闭式机动车行车道，公交车、出租车停车站污染空气吸入管道系统及两侧半封闭收费式机动车停车场组成。另外为了便于公路沿线企事业单位及地下停车场，停车场、停车楼的联合使用，二层机动车道还可在适当部位开设多处引导直通这些地方。

为了便于老、弱、病、残、等乘坐公交车的方便起现，每一公交车站均设两部垂直升降电梯和普通乘客的上下步梯配合使用。

在第二层的建设投入资金的回收，除了靠此层的广告费用收入外还有此层道路两侧停车场的停车费用。

另外，对于自行车行驶的交通问题带停车场分行式立体公路是以第三层，也是立体公路的顶层为自行车专用道来解决的，由于自行车道离地面比较高。上去比较困难，



## 说明书

故在立体公路两侧每隔一段适当距离，即设一处向上运行的自行车专用自动滚梯。而自行车下道时，则可通过左、右带斜面坡道的步梯拾阶而下。此外在自行车道两侧均设有存车棚，在立体公路最终联成网后，

一般情况下，自行车可以不必推下自行车专用道。

下面结合附图，对本发明创造做进一步的详述：

图 1 为立体公路停车场部分横截面剖视图。

图 2 为立体公路停车场部分的俯视图。

图 3 为立体公路公交车站部分的侧视图。

图 4 为二层公交车站部分的平面图。

图 1 主要表现的是带停车场分行式立体公路中的机动车停车场路段的横向剖面示意图部分。在图 1 中(1)为行人通道和步行广场，它由立体公路两侧的绿化带(3)及底层支柱(2)所组成。其主要作用是专为行人提供没有各种机动车和非机动车在同一平面活动的安全空间。

图 1 中立体公路的第二层，分别由停车场护墙(10)、其主要是起防止车辆冲出停车场的阻挡作用。二层支柱(6)、其主要是支撑三层自行车专用道的作用。隔离墩(11)、公交车道(8)（即机动车慢车道）、快车道(9)（即机动车快车道）及机动车道隔离墙(4)所组成。（另外二层的污染空气吸入管道系统及首层污染空气处理中心设施将分案申请专利，所以在本专种申请说明书附图中均未画出。）其二层中的全部构成主要作用是解决机动车的行驶与停放，便于完全脱离与自行车，行人争抢道路造成交通事故频发，交通道路堵塞的问题。使城市机动车容纳数量可以大幅增加，同时又解决了平时城市空气污染的主要污染源的空气净化问题。

图 1 中第三层主要表现的是自行车道及存车处和绿化带的示意图部分。它主要是由自行车存车处(15)顶层外墙(16)遮阳蓬(17)顶层两侧绿化带(14)顶层中心绿化带(12)和自行车道(13)所组成。其主要作用是将自行车彻底与行人和机动车分开，从而达到使机动车、非机动车与行人彻底分开行驶的目地。

另外三层相对比较高，推自行车上去相对比较困难。为此，本发明人在现有的机动滚梯的基础上，增设了一种便于自行车上下的装置。此发明将分案申请专利，在此就不加详述了。

图 2 为图 1 部分的纵向局部俯视图。

图 3 为带停车场分行式立体公路公交车站部分的侧视图。其主要表现的是准备乘车出行的人，如何进入公交车站和出租车车站的示意图。图 3 中(16)为顶层外墙、(17)为顶层遮阳棚、而(28)所示意的是公交车车站、(19)为电梯机房、(24)为电梯机房窗户、(20)为电梯门、(25)站台支柱其作用是支撑车站平台的重量、(21)站台护栏、(26)步梯护栏，其作用是为乘车人提供上下公交车车站的通道、(27)站台护栏，其作用是防止等待乘车的人员跌落。图 3 中(22)为公交车、(23)为出租车。

图 4 为二层公交站部分的平面图。图 4 中(5)为机动车通道、(18)为公交车站站台、(19)为电梯、(29)为步梯，其作用是为乘车人提供上、下通道。图 4 中(30)为出租车站站台护栏，其作用是防止乘车人多时的拥挤状况。图 4 中(31)为公共汽车站站台护栏，其作用和出租车站台护栏相同。

# 说明书附图

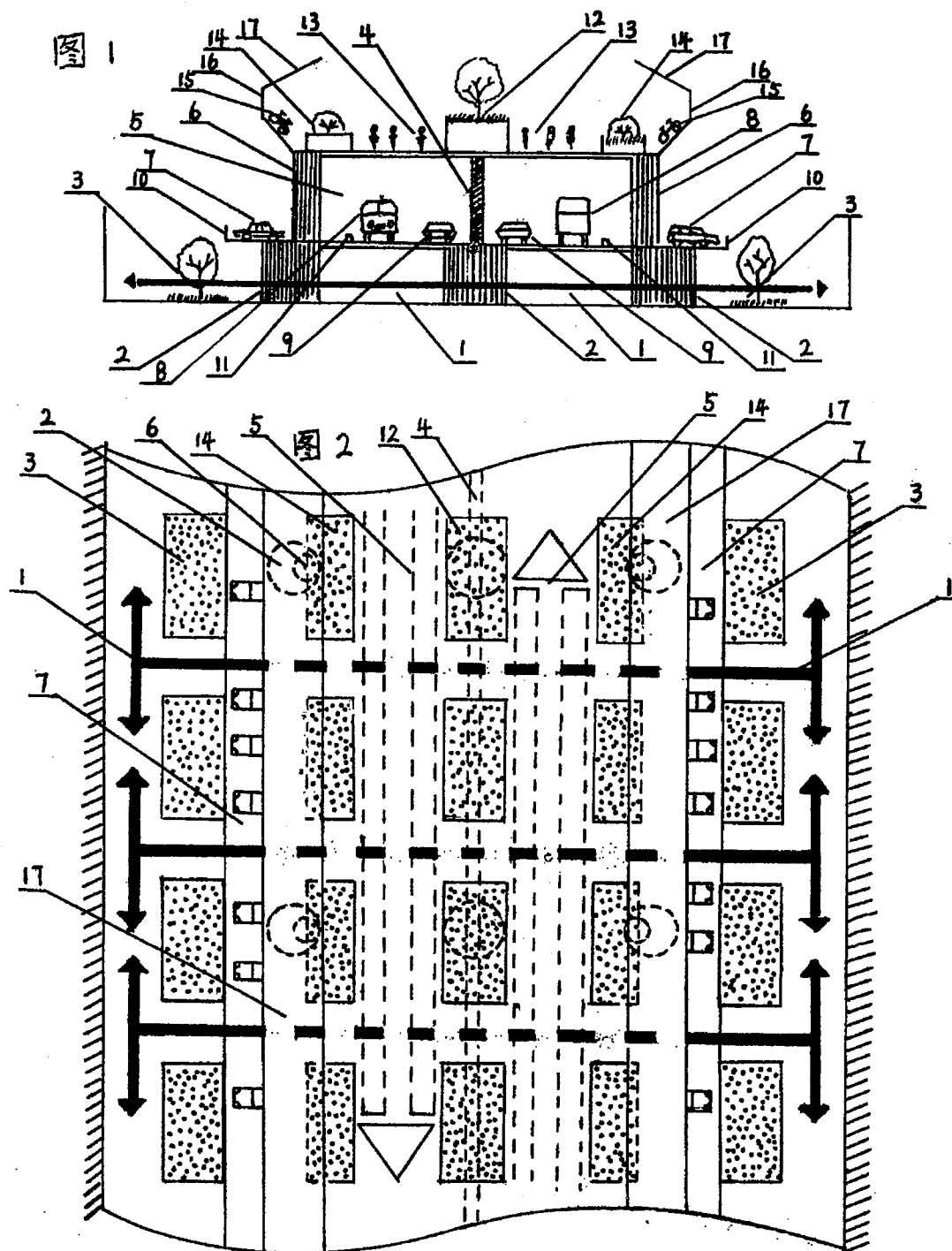


图 3

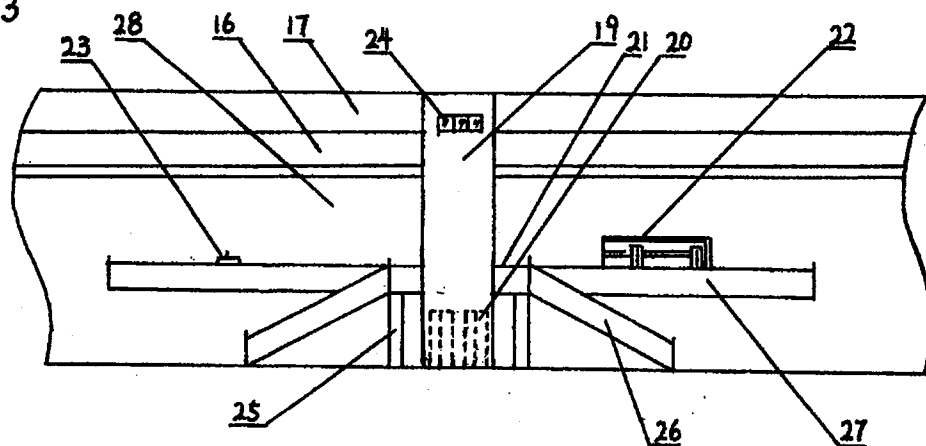
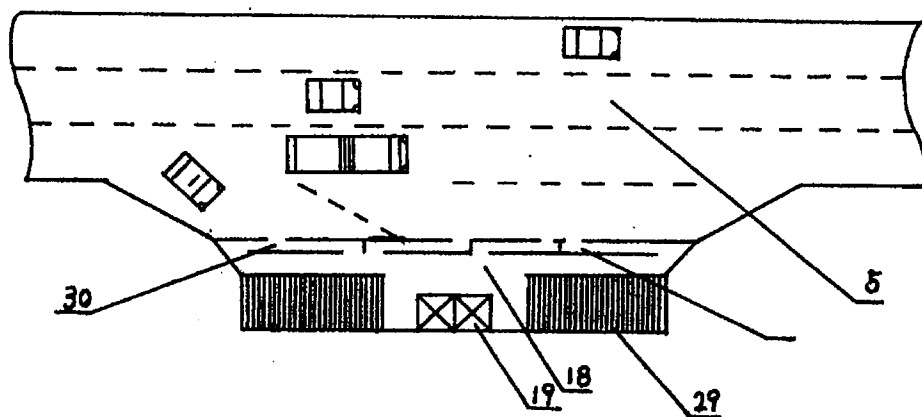


图 4



## DIVIDING STEREO ROAD WITH PARKING AREA

This invention is a stereo traffic system which can separate bicycles, pedestrian and motor vehicles. There are parking area on the two sides of the motor road.

By searching the present technical and document materials, investigating the situation of Beijing, so far, we have not discovered any documents and facilities yet.

The aim of this invention is to solve the problems of traffic jam and interference and traffic accidents caused by bicycles, pedestrian and motor vehicles. Since they are all in a same plane. These problems block the development of the city and make the withdrawing of the road investment difficulty.

In order to solve the problems mentioned above, this invention is made like this: this dividing stereo parking road is comprised by three layers. There are pedestrian square and totally enclosed place for vehicles to turn round on the first layer. On the two sides of the second layer set the parking area. On the third layer, there are bicycle road and greenbelt composed by grass terraces. Its character is that the dividing stereo parking traffic system is comprised by an enclosed stereo traffic system which is composed by three separate layers, top, middle and bottom. The second layer is the enclosed motor road and parking area. The third layer is the road especially for bicycles. The second and the third layers are supported by the columns along the road. The three layers of the roads are connected by the elevators for people and goods, stairs and escalators especially for bicycles to go up and down. On the bottom of the dividing stereo parking system is the first layer which is pedestrian square. In order to separate the pedestrians and the vehicles, generally it is not allowed for vehicles including bicycles to move in this layer. The goods in the stores in the square can be carried in and out at night. Small and medium-sized cargo can be carried by lifts. At the places where vehicles always need to turn round set passages through which the vehicle can go from the second layer to the enclosed turning round construction located in the first layer. In this way the problems of the difficulties of turning round and traffic accidents can be solved.

The second layer is located in the middle. The aim of constructing this layer is to solve the problems of the increasing number of vehicles, traffic jams and control the

emission of exhaust air. It is mainly composed by a semi-closed motor road, bus station and taxi platforms, pipeline system for recycling the exhausted air and semi-closed parking area.

In order to make the using of the underground parking area and the parking building more convenient, there can be several guide passage connecting the motor way on the second layer and the parking area.

In order for the old, weak, sick, disabled and pregnant women to take vehicles easier, there are two set of elevators, lifts and moving walk in every bus station.

We can take back the investigation of the second layer by advertising fee and parking fee on this layer.

The third layer i.e. the top layer of the dividing stereo parking area road is especially for bicycles. Because the bicycle passage is high from the ground level, it is hard to get on. There are one elevator for bicycles on every suitable point of the two side of the bicycle road. And the bicycles can get down using the slop on the left and right side. There are several parking areas for bicycles one the two sides of the bicycle road, so it is no need to get the bicycles gown the bicycle road.

Next the details of the invention will be illustrated by figures.

FIG. 1 is the cross-section cutaway view of the parking area of the stereo road.

FIG. 2 is part of the overhead view of the stereo road.

FIG. 3 is the side view of the bus stations of the stereo road.

FIG. 4 is the straight view of the bus station on the second layer.

FIG.1 is the cross-section cutaway view of the parking area for motor vehicles of the dividing stereo parking road. There are pedestrian passage and walking square in FIG. 1, it is composed by the greenbelt 3 and the columns 2 on the two sides of the road. Its function is to supply the pedestrian one safe area on the same plane on which there are motor and non-motorized vehicles.

On the second layer of the stereo road there are parking area 7 and parapet 10, its function is to stop the motor vehicles to go out of the parking area. The function of the column 6 on the second layer is to support the bicycle road on the third layer. Hard shoulder 11, the bus way 8 i.e. the slow vehicle lane, fast lane 9 i.e. motor vehicle fast

lane and the separate wall 4. The exhausted air imbibing pipeline system and the exhausted air disposing system will be apply patent separately, so there are no pictures on this patent application. All the structures on the second layer is to convenient the moving, parking of the vehicles and separate them from the bicycles and the pedestrians, solve the problem of traffic accident and traffic jam. It can cooperate with lager number of the motor vehicles in city, in the same time it can sole the problem of purifying the exhausted air in its sources in the city.

FIG.1 is the sketch of the bicycle lane, bicycle parking area and the greenbelt on the third layer. It is mainly composed by bicycle parking area 15, top outside wall 16, awning 17, greenbelt 14 on the two top sides, greenbelt 12 on the two top sides and the bicycle passage13. Its purpose is to separate the bicycles from the pedestrians and the motor vehicles completely. In this way it can separate the motor vehicles, the non-motor vehicles and the pedestrians completely.

The third layer is comparatively higher, the bicycles is hard to get on. In addition to the present elevator, the inventor have designed one kind of device to make the getting on and down for bicycles more easier. This invention will be applied for another patent, so there is no detail in this applying.

FIG. 2 is part of longitudinal overhead view of FIG. 1.

FIG. 3 is the side view of the bus station of the dividing stereo parking road. It is mainly express how the people who will go outside by vehicles to enter the bus station and the taxi station. 16 in FIG. 3 is the top outside wall; 17 is the top awning and 28 is the bus station; 19 is the controlling room of the elevators; 24 is the window of the controlling room; 20 is the elevator door; 25 is the bus station supporting column, its function is to support the weight of the platform. 21 is the bus station barrier; 26 is the escalator passage barrier, its function is to support one passage for people to go on and down the bus station; 27 is the bus station barrier, its function is to avoid the people who is waiting for the bus from falling off; 22 in FIG. 3 is the bus; 23 is the taxi.

FIG. 4 is the plan view of the bus station on the second layer. 5 in FIG. 4 is the motor passage; 18 is the platform of the bus station; 19 is the elevator; 29 is the

escalator, its function is to support a passage for the passenger; 30 in FIG. 4 is the barrier of the taxi station, its function is to prevent the too crowd station when there is a lot of people.

Claims:

1. This kind of road is a dividing stereo road with parking area. The first layer is a pedestrian square and totally enclosed place for vehicles to turn round. On the two sides of the second layer is parking area. The third layer is the passage especially for bicycles and the greenbelt consisted by grass terraces. Its characteristic is : the dividing stereo parking road is a totally enclosed system consisted by three layers . Its second layer is a totally enclosed fast traffic lane and parking area, the third layer is road especially for bicycles. The second layer and the third layer are supported by the columns along the road.
2. The character of the dividing stereo parking road according to claim 1 is : The first layer is a pedestrian square. The place for vehicles to turn round is composed by an enclosed framework.
3. The character of the dividing stereo parking road according to claim 1 is:there is a center of treating polluted air set in each certain distance on the first floor,coordinated with the center of collecting polluted air on the second floor.
4. The character of the dividing stereo parking road according to claim 1 is: On the two sides of the enclosed fast traffic lane on the second layer are parking areas except for some bus stations and some crossing point.
5. The character of the dividing stereo parking road according to claim 1 is: Required by the public transportation, on the second layer, on the two sides of the fast traffic lane set the bus stations. There is special platform for taxi on every bus station. There is an elevator both for people and goods on the platform of every bus station. There is a partition wall in the middle of the enclosed fast traffic lane on the second layer. The wall can separate the vehicles which move in opposite directions on the two sides of the road.
6. The character of the dividing stereo parking road according to claim 1 is: The third layer is an enclosed road especially for bicycles. On the two sides of the road set the parking area for bicycles. In the middle of the road and between the parking area and the lane are the greenbelt. On the bicycle road, there are escalators especially for bicycles to go up and down.

### **Abstract**

A multi-layer highway is disclosed for preventing traffic jam. It is composed of the ground layer for pedestrians and squares, the first layer for polluted air treating center and the full-closed turn round facilities of motor-driven vehicles, the second layer for passages of motor-driven vehicles, parking lot, bus stops, and polluted air collecting center, and the third layer for bicycles and their parking, and greening belts on the multi-layers.